

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Disposition of Claims**

Claims 1, 3-7, 10, 15, 26-31, 33, and 35-38 were pending in the present application. By way of this reply, claim 15 is cancelled without prejudice or disclaimer. Accordingly, claims 1, 3-7, 10, 26-31, 33, and 35-38 are now pending in the present application. Claims 1, 33, and 35 are independent. The remaining claims depend, either directly or indirectly, from claims 1 and 35.

**Claim Amendments**

Claims 1, 29, 33, and 35-37 are amended to incorporate the subject matter of now-cancelled claim 15 and/or for clarification. Applicant respectfully asserts that no new matter is added by way of these amendments as support for these amendments may be found, for example, in paragraphs [0022], [0027], and [0033]-[0036] of the originally filed specification, in the corresponding figures, and in the originally filed claims.

**Rejections under 35 U.S.C. § 112, first paragraph**

Claims 1, 35, and 37 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner contends that claims 1, 35, and 37 contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. *See* Action at page 2. For the reasons set forth below, this rejection is respectfully traversed.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *See, e.g., Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003); *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1563, 19 USPQ2d at 1116. Further, an applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). The subject matter of the claim need not be described literally (*i.e.*, using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement. *See* MPEP § 2163.02. However, while there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through *express, implicit, or inherent* disclosure. *See* MPEP § 2163 (emphasis added).

### Claim 1

The Examiner contends that the limitation “wherein the first node is configured to send the request to the second subnet of nodes only when the first subnet of nodes cannot replace the first replicated service,” as recited by independent claim 1, is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. *See* Action at pages 2 and 3. Applicant respectfully disagrees with the Examiner’s contentions.

As an initial matter, Figure 2 of the originally filed specification discloses a node topology where each node is ***directly connected*** to every other node. *See* Specification at paragraph [0015] and Figure 2. Moreover, Figure 3 of the originally filed specification discloses multiple node subsets, where each node subset may have a topology like the one shown in

Figure 2. *See* Specification at paragraph [0024] and Figure 3. In other words, by reading the cited paragraphs and viewing the Figures, one skilled in the art will appreciate that nodes within the same subset of Figure 3 are ***directly connected*** to each other, while nodes in different subsets are indirectly connected.

When a replicated service on a node (“source node”) has failed, is busy, or is unavailable, the specification *explicitly* discloses the source node generates a request for the replicated service and sends the request to the nodes ***directly connected*** to the source node. *See* Specification at paragraph [0026]. In view of the above, this implies the request is sent to all nodes in the same subset as the source node because all nodes in the same subset are ***directly connected***. In the event no response is received as a result of sending the request, the specification *explicitly* discloses the source node then sends the request to a wider set of nodes. *See* Specification at paragraph [0030]. In view of the above descriptions, the wider set of nodes pertains to nodes that are *not* directly connected to the source node, such as nodes located in other subsets.

Accordingly, in view of the above, the limitation “wherein the first node is configured to send the request to the second subset of nodes only when the first subset of nodes cannot replace the first replicated service,” as recited by amended independent claim 1, is disclosed in the Specification (*i.e.*, expressly, implicitly, or inherently) with sufficient detail, that one skilled in the art would reasonably conclude that the inventor had possession of the claimed invention. This is sufficient to satisfy the written description requirement. *See, e.g., Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003); *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1563, 19 USPQ2d at 1116. Accordingly, amended

independent claim 1 satisfies the written description requirement of 35 U.S.C. § 112, and withdrawal of this rejection is respectfully requested.

Claim 35

The Examiner contends that the limitation “wherein the first node is configured to compare the request to replace the service with the entry...,” as recited by claim 35, is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. *See* Action at page 3. By way of this reply, independent claim 35 is amended to recite, in part, “wherein the first node is configured to examine the entry in the cache based on the request to replace the service, and send a response to the second node using the mesh interconnect.” Applicant respectfully asserts sufficient description for this limitation, as required by 35 U.S.C. § 112, may be found, for example, in paragraphs [0022] and [0027] of the originally filed specification. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 37

The Examiner contends that the limitation “wherein the first application is not vulnerable to the virus,” as recited by claim 37, is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. *See* Action at page 3. By way of this reply, claim 37 is amended to recite, in part, “wherein the second application has failed due to a virus targeting the second operating system, and wherein the virus does not target the first operating system.” Applicant respectfully asserts sufficient description for this limitation, as required by 35 U.S.C. § 112, may be found, for example, in paragraphs [0035] and [0036] of the originally filed specification. Accordingly, withdrawal of this rejection is respectfully requested.

**Rejections under 35 U.S.C. § 112, second paragraph**

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner contends that independent claim 1 recites the limitations “the first subnet” and “the second subnet” for which there is insufficient antecedent basis. *See* Action at page 3. By way of this reply, independent claim 1 is amended to recite, in part, “the first subset” and “the second subset,” for which there is sufficient antecedent basis. Accordingly, Applicant respectfully asserts amended independent claim 1 satisfies all requirements of 35 U.S.C. § 112, and withdrawal of this rejection is respectfully requested.

**Rejections under 35 U.S.C. § 103**

Claims 1, 3-7, 10, 15, 26-31, 33, and 35-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0049573 (hereinafter “Olmstead”). By way of this reply, claim 15 is cancelled and thus the rejection is moot as to claim 15. As for the remaining claims, for the reasons set forth below, this rejection is respectfully traversed.

“To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). *See* MPEP § 706.02(j). Applicant respectfully asserts that the Examiner has failed to do so.

If the Examiner does not produce a *prima facie* case, Applicant is under no obligation to submit evidence of non-obviousness. The initial evaluation of *prima facie* obviousness thus relieves both the Examiner and Applicant from evaluating evidence beyond the prior art and the

evidence in the specification as filed until the art has been shown to suggest the claimed invention. *See* MPEP § 2142.

The Examiner contends that Olmstead teaches or suggests a first node configured to: (i) generate a request to replace a first replicated service executing on the first node when the first replicated service is unavailable; (ii) send the request to a plurality of nodes; (iii) receive a response to the request from a second node indicating the second node comprises a replacement for the first replicated service; and (iv) route a request for the first replicated service to the second node. *See* Action at page 5. Applicant respectfully disagrees with the Examiner's contentions. Specifically, Applicant respectfully asserts the Examiner is mischaracterizing the prior art, which is improper.

Olmstead discloses a cluster management system (CMS) comprising multiple nodes each offering at least one service. Upon failure of a node in the cluster, other nodes in the cluster serve as substitutes (*i.e.*, backup nodes) for the failed node. Olmstead further discloses that one node within the CMS is designated as the cluster manager. The cluster manager is responsible for detecting and managing node failures. Specifically, when the cluster manager detects a failed node, the cluster manager publishes a broadcast message reporting the failed node to all subscribers of the failed node. The cluster manager then selects one or more backup nodes to replace the service(s) previously offered by the failed node. *See* Olmstead at paragraphs [0001], [0002], [0031], and [0061].

In view of the above, Olmstead explicitly discloses that it is the responsibility of the cluster manager to identify a failed node and the responsibility of the cluster manager to broadcast the failure of the node. In other words, a failed node in Olmstead's system is not responsible for broadcasting its own failure. This squarely contradicts at least above-listed items

(i) and (ii). Thus, Olmstead fails to anticipate or render obvious a first node configured to: generate a request to replace a first replicated service executing on the first node when the first replicated service is unavailable; and send the request to a plurality of nodes, as recited by the amended independent claims.

Further, as also discussed above, Olmstead explicitly discloses that it is the responsibility of the cluster manager to select backup node(s) to replace the failed node. In other words, a failed node in Olmstead's system is *not* responsible for selecting its own backup nodes. This squarely contradicts at least above-listed items (iii) and (iv). Thus, Olmstead also fails to anticipate or render obvious a first node configured to: receive a response to the request from a second node indicating the second node comprises a replacement for the first replicated service; and route, based on the response and using a master-less routing policy, a request for the first replicated service from a third node of the plurality of nodes to the second node, as recited by the amended independent claims.

In view of the above, the Examiner's contentions and the cited prior art reference do not support a rejection of amended independent claims 1, 33, and 35. Claims 3-7, 10, 26-31, and 36-38 depend, either directly or indirectly, from independent claims 1 and 35. Accordingly, the Examiner's contentions and the cited prior art reference also do not support a rejection of claims 3-7, 10, 26-31, and 36-38, and withdrawal of this rejection is respectfully requested.

Further, a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). *See* MPEP § 2141.02.

Amended independent claim 1 explicitly recites, in part, “route, based on the response and using a master-less routing policy, a request for the first replicated service...” (emphasis added). Amended independent claims 33 and 35 recite similar limitations. In other words, the amended independent claims, read in light of the specification, effectively recite the routing of a request *without* the use of a master node (*i.e.*, cluster manager). *See, e.g.*, paragraphs [0033] and [0034] of the originally filed specification. In contrast, as discussed above, Olmstead discloses a cluster manager that is of paramount importance in the detection of node failures and subsequent re-routing of service requests. In other words, the cluster manager is central and fundamental to Olmstead’s system. However, this clearly teaches away from the master-less routing policy explicitly recited by the amended independent claims. Accordingly, Olmstead cannot render obvious amended independent claims 1, 33, and 35, and withdrawal of this obvious rejection is respectfully requested.



**Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 33226/358001).

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Respectfully submitted,

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